WOLINSKI, W.; ADAMOWICZ, T.; NOWICKI, M.; KAZMIROWSKI, A.

Optimum composition of the He and Ne mixture in a laser.
Bul Ac Pol tech 12 no.7:541-546 '64.

1. Department of Electron Instruments of the Technical
University, Warsaw. Presented by J. Groszkowski.

30308

S/148/62/000/004/001/006
E111/E435

7100

AUTHORS: Permyakov, V.G., Kaz'miruk, A.I.

TITLE: Change in the structure and properties of nitrided and heat treated 35ХМЮА (35KhMYuA) steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.4, 1962, 118-123

TEXT: Nitriding followed by heat treatment of the steel 35KhMYuA was investigated. Specimens were nitrided in a stream of dissociated ammonia at 600 to 900°C (50°C intervals) for 2 to 11 hours and oil quenched. Tempering was carried out at 100 to 550°C for 1 hour, specimens being sealed in quartz ampules. The specimens were subjected to microstructure, microhardness, magnetic and X-ray structural investigation. At over 650°C nitriding gave a 0.5 to 0.7 mm thick layer in 8 to 11 hours; subsequent hardening led to formation of a very hard layer of nitrogen-carbon martensite and residual austenite. Tempering produced in the hardened layer a mixture of ferrite and dispersed carbonitride phases; the resulting hardness with tempering at

Card 1/2

250 and 400 - 450°C was greater than that of the layer in the hardened state. Nitriding at 650 to 750°C for 8 to 11 hours followed by hardening and tempering gave practically the same nitrided-layer thickness and the same ferrite-carbide mixture structure and high surface hardness as produced by the present-day nitriding treatment for this steel (60 to 70 hours at 520 to 540°C). For parts of simple shape the currently used long treatment can be replaced by short nitriding at 650 to 750°C, followed by tempering at 400 to 450 or 250°C. There are 5 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiyev Polytechnical Institute)

SUBMITTED: November 9, 1960

ACCESSION NR: AP4029000 S/0126/64/017/003/0413/0418

AUTHOR: Permyakov, V. G.; Kaz'miruk, A. I.

TITLE: Formation of nitrogen carbon phases in high temperature nitration of medium carbon steels

SOURCE: Fizika metallov i metallovedeniye, vol. 17, no. 3, 1964, 413-418

TOPIC TAGS: carbon steel, nitration, 38 KhMYuA steel, 45 steel, Armco iron, phase composition, martensite conversion, tempering, carbon, nitrogen, iron

ABSTRACT: In this paper, the authors report the results of the study of phase composition and conversions during heating of Armco iron and the steels 45 and 38 KhMYuA tempered after nitration at 700-750°. The compositions of these substances are presented in a table. Literature data on the nitration of carbon steels and the phase conversions in the iron-nitrogen-carbon system are not published systematically, and many conclusions are drawn without adequate basis by analogy with the iron-carbon system. In order to explain certain properties of the formation of nitrogen carbon austenite in the nitration and character of phases formed during tempering, investigation was undertaken in the magnetic properties of samples of steel 45 with a different initial size of pieces of cementite tempered after nitration at 700° for

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ACCESSION NR: AP4029000

different lengths of time. Thermal magnetic tempering curves and dilatometric curves of steel 45 are presented in graphs. In their conclusions, the authors claim that during high temperature nitration of carbon steel a layer of nitrogen carbon austenite, which undergoes a martensite conversion during quenching, is formed during a specific stage in the process. In the course of annealing of nitrogen carbon martensite and residual austenite, carbonitrides of the types FE3(CN) and FE4(N,C) as well as nitrogen carbon ferrite are formed. The γ'-phase of carbon steel is of a carbonitride character. During heating, the nitrogen carbon annealing structures undergo a conversion which results in the formation of austenite. This formation as well as the nitrogen carbon phase takes place within a temperature range of 600-700°. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: Kiyevsk politekhnicheskiy institut (Kiev Polytechnical Institute)

SUBMITTED: 15Dec62 DATE ACQ: 27Apr64 ENCL: 00

SUB CODE: ML NO REF SOV: 012 OTHER: 005

Card 2/2

L 18047-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3002845 S/0126/63/015/006/0867/0872

83

AUTHORS: Permyakov, V. G.; Kaz'miruk, A. I.

TITLE: Phase composition and growth of a diffusion 14 layer in the process of high-temperature nitriding 14

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 6, 1963, 867-872

TOPIC TAGS: Armco iron, steel 45, nitriding, steel 38KhMYuA, diffusion layer, growth, phase composition, microhardness, microstructure

ABSTRACT: The samples of Armco iron and steels 45 18 and 38KhMYuA 18 were nitrided at 600-800C and oil hardened. Their microstructure, microhardness, and phasal compositions were studied. The Armco iron contained 0.02% carbon and was practically devoid of alloying elements; the steels contained 0.48 and 0.40% of carbon and various amounts of Si, Mn, Cr, S, and P. The results showed that the Armco iron had a sharp boundary between the nitrous austenite case and the nitrous ferrite core. The hardened layer grew inward along its whole frontal surface, its progress regulated by the growth velocity of the grains in one direction. Steel 45 showed the formation and growth of new disseminated austenite grains in the zone of hardness gradation. This was explained by the presence of alloying elements that brought

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ACCESSION NR: AP3002845

about the formation of nitrides and by the assimilation of surplus nitrogen by the
disseminated grains. Experiments with steel 38KhMYuA (also containing the alloying
elements) showed that the growth mechanism of the case (at a certain stage) followed
the same pattern as that of carbon steels (after the hardened layer reached a
certain thickness, its further growth was regulated by nitrogen diffusion). Orig.
art. has: 1 table and 4 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiev Polytechnic Institute)

SUBMITTED: 05Jul62	DATE ACQ: 23Jul63	ENCL: 00
SUB CODE: ML	NO REF SOV: 009	OTHER: 001

Card 2/2

ACCESSION NR: AP4020247 S/0129/64/000/003/0042/0044

AUTHOR: Permyakov, V. G.; Kaz'miruk, A. I.

TITLE: Formation and phase composition of a diffusion layer during the high-temperature nitriding of 38KhMYuA-steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1964, 42-44

TOPIC TAGS: diffusion layer, nitriding, ferrite carbide structure, phase transformation, austenite formation, supercooling

ABSTRACT: The authors investigated the mechanism of the formation of a diffusion layer during the high-temperature nitriding of ferrite-carbide structures. The composition of the 38KhMYuA-steel specimens was the following: 0.40% C; 0.34% Si; 0.48% Mn; 1.55% Cr; 0.86% Al; 0.20% Mo; 0.025% S and 0.022% P. Nitriding was preceded by the usual heat treatment, cold drawing and recrystallization annealing under vacuum. Nitriding temperatures were 750 C and a vertical tubular furnace was used. The increase of the diffusion layers during this process was accompanied by phase transformation and occurred as a result of the formation of nuclei and the growth of crystals of the new phase. The character of its

ACCESSION NR: AP4020247

connection with the initial structure is affected by the rate of crystallization and the supply of nitrogen to the crystallization front. Furthermore, carbon and alloying elements are redistributed during nitriding as evidenced by the formation of austenite with a different tendency towards supercooling during hardening. Orig. art. has 2 figures.

ASSOCIATION: Kievskiy politekhnicheskiy institut (Kiev Polytechnic Institute)

SUBMITTED: 00 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: ML NO. REF. SOV: 004 OTHER: 000

KAZNACHEVSKIY, M. G.

PA 20/49T89

USSR/Mining
Mining Equipment
Coal

Dec 48

"Standardization of Cars in Coal Mines of the Eastern Regions of the USSR," M. G. Kaznachevskiy, N. A. Lapovenko, Giprovostokuglemash, 2 pp

"Ugol'" No 12 (273)

Mines in eastern regions use various types of cars. This adds to production costs and complicates organization of mine operation. Suggests standardized cars for all mines and recommends certain basic data for determining the optimum shape and type of mine car.

20/49T89

KAZNEVSKIY, Viktor Pavlovich; DOBRONRAVOV, V.V., professor, doktor fiziko-matematicheskikh nauk, nauchnyy redaktor; BASHKATOV, S.S., redaktor; KARYAKINA, M.S., tekhnicheskiy redaktor

[Scouts in interplanetary spaces] Razvedchiki mezhplanetnogo prostranstva. Pod nauchnoi red. V.V.Dobronravova. Moskva, Izd-vo DOSAAF, 1957. 103 p. (MIRA 10:11)
(Rockets (Aeronautics))

S/137/62/000/009/025/033
A006/A101

AUTHORS: Kaznachey, B. Ya., Balashova, N. N., Rozhdestvenskaya, A. K.

TITLE: Electrodeposition of nickel with low internal stresses out of sulfamic electrolytes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1962, 122, abstract 9I791 ("Tr. Vses. n.-i. in-ta zvukozapisi", 1961, no. 9, 157 - 168)

TEXT: Internal stresses in Ni deposits obtained out of sulfamic electrolytes without admixtures, are much lower (by 1,000 - 2,000 kg/cm^2) than in deposits obtained from sulfuric acid electrolytes. In this connection sulfamic electrolytes are recommended for galvanoplastics and precipitation of thick Ni deposits. Contamination of sulfamic electrolytes with mechanical organic and metallic impurities increases internal stresses. A method is mentioned for electrolyte refining. Internal stresses in Ni deposits obtained in sulfamic electrolytes increase with higher D_c and pH of the electrolyte and decrease at elevated temperatures. The considerable proneness to pitting in sulfamic electrolytes is explained by high surface tension of the electrolyte (as compared to sulfuric

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Electrodeposition of nickel with...

S/137/62/000/009/025/033
A006/A101

acid electrolyte). The addition of 0.1 - 1.0 g/l Na-laurylsulfate (I) reduces surface tension and eliminates pitting. (I) can be well combined with admixtures to reduce internal stresses. Hydrolysis of sulfamic electrolytes increases internal stresses in Ni-deposits. Refining of sulfamic electrolytes from SO_4^{2-} ions may be performed by $Ba(OH)_2$ precipitation. There are 17 references.

Authors' summary

[Abstracter's note: Complete translation]

Card 2/2

KAZNACHEY, B.Ya.

PHASE I BOOK EXPLOITATION 1089

Popilov, L.Ya., Demchuk, I.S., Bogorad, I.Ya., Bogorad, L.Ya.,
Kaznachey, B.Ya., Belyayev, G.S., Askinazi, B.M., Zaytseva, L.P.,
~~Dyatchenko, A.P.~~

Elektrotekhnologiya (Electrical Methods of Processing Materials)
[Leningrad] Sudpromgiz, 1952. 377 p. 5,000 copies printed.

Resp. Ed.: Slonimskiy, V.I.; Ed.: Lachininskaya, O.V.; Tech. Ed.: Frumkin, P.S.

PURPOSE: This book is intended as a practical guide for engineering and technical personnel of industrial establishments and for workers in design and planning organizations and scientific-research institutes. It may also be useful to students of vuzes and tekhnikums.

COVERAGE: The book explains the technology of processing and finishing metals and materials by electrical methods. No personalities are mentioned. There are 46 references, all Soviet.

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Electrical Methods (Cont.) 1089

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KAZNACHEY, B. Ya.

KAZNACHEY, B.Ya.; TSVIGIN, M.G.

Reducing the liberation of harmful gases from chromium plating electrolytes. TSvet.met. 27 no.5:74 S-O '54. (MIRA 10:10)
(Chromium plating--Safety measures)

KAZNACHEY, B.Ya.; REGIRER, Ye.I., redaktor; YUZHNAYA, Ye.A., redaktor; MEL'NIKOVA, N.V., tekhnicheskiy redaktor

[Galvanoplastic process in industry] Gal'vanoplastika v promyshlennosti. Pod red. E.I.Regirera. Moskva, Gos.izd-vo mestnoi promyshl. RSFSR, 1955. 173 p. (MLRA 8:12)
(Electrotyping)

KAZNACHEY, B.Ya.

Electrodeposition of hard magnetic alloys. Biul. tekh.-ekon. inform. no.1:38-39 '57. (MIRA 11:4)
(Electroplating) (Alloys--Magnetic properties)

SOV/137-58-10-21369

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 131 (USSR)

AUTHORS: Kaznachey, B. Ya., Zhogina, V. M.

TITLE: Electrolytic Preparation of a Nickel-cobalt Alloy With Given Magnetic Characteristics (Elektroliticheskoye polucheniye splava nikel'-kobal't s zadannymi magnitnymi kharakteristikami)

PERIODICAL: Tr. Vses. n.-i. in-ta zvukozapisi, 1957, Nr 1, pp 79-90

ABSTRACT: A technique was developed for the preparation of a non-porous, uniformly thick, and structurally homogeneous electrolytic Ni-Co coating with magnetic characteristics (coercive force of 200 - 300 oersted and residual induction of 5000 - 6000 gauss), which would satisfy the demands for magnetic sound recording. The optimum conditions for the process are adduced.

N. P.

1. Cobalt-nickel alloy coatings--Preparation
2. Cobalt-nickel alloy coatings--Magnetic properties

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SOV/137-58-9-19582

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 208 (USSR)

AUTHORS: Kaznachey, B.Ya., Zhogina, V.M.

TITLE: Electrolytic Deposition of Highly Coercive Nickel-cobalt Alloy (Elektroosazhdeniye vysokokoertsitivnogo splava nikel'-kobal't)

PERIODICAL: Tr. Vses. n.-i. in-ta zvukozapisi, 1957, Nr 1, pp 91-93

ABSTRACT: The effect of the conditions of electrolysis on the properties of coatings of an Ni-Co alloy with H_c = 500-800 oersted and a residual induction of 4000-5000 gauss was investigated and a technique for producing them was developed. The electrolytic deposition of the alloys was conducted in a solution of the following composition (in g/ℓ) : $NiCl_2 \cdot 6H_2O$ 120, $CoCl_2 \cdot 6H_2O$ 120, NH_4Cl 100, NaH_2PO_2 9. Upon the increase of the cathode cd from 1 to 20 amp/dm^2, H_c of the deposit increases. Optimum results are obtained at a cathode cd of 10-15 amp/dm^2. Upon an increase of the temperature of the electrolysis from 20 to 90°C the magnetic properties of the alloy pass through a maximum at 40-60°. At pH = 1.0-4.5 the alloy deposited has strong magnetic properties; at pH > 5 H_c of the alloy decreases.

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SOV/137-58-9-19582

Electrolytic Deposition of Highly Coercive Nickel-cobalt Alloy

Upon an increase in the concentration of NaH_2PO_2 H_c increases to maximum values of 600-700 oersted and then, beginning with 13 g/ℓ, it decreases. In a pilot-plant bath Ni-Co alloy was deposited on a drum during its rotation and in the presence of screens. The density of the recording and the amplitude of the outgoing signal of the Ni-Co alloy #2 obtained are equal in value to the powder coating 101, whereas it surpasses it in mechanical properties.

N.K.

1. Cobalt-nickel alloys--Electrodeposition --Effectiveness 2. Electrolytes--Properties 3. Electrolysis

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KHZNNCHETEV, B. Ya.

p.3

23(4) 23 (5) SOV/77-4-2-15/18

AUTHOR: Lyalikov, K.S.

TITLE: Successes of Soviet Electrophotography (Uspekhi sovetskoy elektrofotografii) A Scientific and Technical Conference on Questions of Electrography (Nauchno-tekhnicheskaya konferentsiya po voprosam elektrografii)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 2, pp 149-152 (USSR)

ABSTRACT: This is an account of a scientific and technical conference on electrography, the first to be held in the Soviet Union and evidently in the world. It was organized in Vil'nyus on December 16-19, 1958 by the Soviet narodnogo khozyaystva Litovskoy SSR (Council for National Economy of the Lithuanian SSR), the Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta ministrov Litovskoy SSR (State Scientific and Technical Committee of the Council of Ministers of the Lithuanian SSR) and the Nauchno-issledovatel'skiy institut elektrografii (Scientific Research Institute of Electrography). The conference, attended by over 300 scientific workers, was opened by the Deputy Chairman of the Council for National Economy of the Lithuanian SSR P.A. Kul'vets, after which the director of the Institute for Electrography, I.I.Zhilevich, reviewed the state and prospects for development of electrography in the USSR. He stated that research in this field should be carried out along the following lines: a) a search for new photo-active materials with high dark resitance; b) physical research into the internal photoeffect; c) development of photosemiconductor layers; d) development of the theory of the electrophotographic process. K.S. Lyalikov (speaking also for O.G. Popova) gave a report in which he suggested determining the light sensitivity of electrophotographic layers in GOST units. N.Z. Plavina (speaking also for I.I.Zhilevich, L.I.Kyun'ko, M.M.Markevich, P.I. Kalinauskens and O.K. Suveyzdis) reported on some research on the sensitization of a semiconductor in electrophotographic layers. V.M. Fridkin gave a report on highly sensitive electrophotographic layers and an electrophotocopying device, and reviewed the formation process of the latent electrophotographic image on the basis of the zonal theory. He also described the design of an electrosensitometer for determining sensitivity by the relaxation period of a charge on the surface of the layer, and the circuit of an electrophotographic copying device. Anfilov finished describing the latter and then spoke on the mechanics and kinetics of the development of the latent electrophotographic image in liquid developers.

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SOV/77-4-2-15/18

Successes of Soviet Electrophotography; A Scientific and Technical Conference on Questions of Electrography

K.M. Vinogradov described some of the features of the cascade and liquid methods of electrophotographic development. Yu.Ye. Karpeshko devoted his report to the criterion of light sensitivity of the elctrophotographic process. After the reports, a discussion took place on methods of determining the light sensitivity of electrophotographic layers. A.N. Chernyshev spoke on the prospects of developing polygraphic processes using electric and magnetic forces. O.V. Gromov (speaking also for I.I. Zhilevich, A.A. Sukhiy, V.A. Gordeyeva, A.S. Pauzha and Yu. I. Kevalaytis) reported on the development of elctrophotographic reproducing equipment. A.S. Pauzha (speaking also for I.I. Zhilevich, A.S. Borisovich, N.M. Gal'vidiks and M.I.Rautkauskas) reported on the use of electrographic methods in recording oscillographs and other recording instruments. V.P. Yurchenko (speaking also for L.N. Palin) spoke on the possibility of electrophotographically recording images from electron-beam tubes. L.S. Korol' (speaking also for N.M. Markevich, T.I. Kozlovskaya, B.I. Kalinauskene, M.K. Naynens, I.I. Zhilevich and K.A. Montrimas) gave a detailed description of laboratory and machine methods of producing photosemiconductor papers (zinc oxide was used). A.A. Sukhiy (speaking also for I.I. Zhilevich, O.V. Gromov, V.A. Gordeyev, K.V. Peigotov and T.M. Ger') described a laboratory and industrial machine for producing photosemiconductor papers. T.A. Shishkina (speaking also for Ya.A. Oksman) reported on a method of examining electrophotographic materials using an a/c bridge. S.I. Khotyanovich (speaking also for A.I. Gikens and I.S. Shilevkens) spoke on developing materials for electrophotography and ferromagnitography, including developers giving a "reverse" image. B.I. Tikhonov reviewed methods of measuring the electrostatic potentials of electrophotographic layers, stressing that the oscillating electrode should not be placed above a layer with varying potential as this causes self-discharge. E.V. Krukovskis (speaking also for R.S. Gorevoy, A.N. Osipov and Ye. S. Kheyfets) spoke on the practice of producing velveteen papers in an electrostatic field, and showed samples produced by the Grigishskaya paper factory. Ye.L. Nemirovskiy then gave a historical review of the development of electrographic methods in which he paid tribute to the work of the Scientific Research Institute of Electrography in Vil'nyus and the Institut poligraficheskogo mashinostroyeniya (Moskva)-(Polygraphic Machine-Building Institute (Moscow)). Debates were then held

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on methods of measuring the potential of charged electrophotographic layers, the vibration pick-up most-used was shown in B.I. Tikhonov's report to be not always accurate. S.G.Gronishin stated that the bad influence of the oscillating electrode can be eliminated if the electrode probe above its surface is fixed and the pick-up is connected to it by a shielded cable. In the debate on Ye.L. Nemirovskiy's report it was stated that the research of Academicians A.N. Terenin and Ye.K. Putseyko should be considered as the basis of all work on electrophotographic papers with ZnO, as they were the first to show the possibility of optical sensitization of the internal photoeffect in ZnO. M.M.Gol'vidis then gave a report on the depositing of charges by a corona discharge. A.I. Kaminskas and A.P. Yanulis reviewed some of the results of the use of electrographic methods in radiography. L.I. Nyun'ko (speaking also for I.I. Zhilevich, I.Z. Plavin, Yu.K. Vishchakas and Yu.A.Zibuts) reported on relaxation processes in semiconductor layers, using a vibration electrometer. Yu.K.Vishakas gave a report on research on some physical properties of the polycrystalline layers of selenious cadmium. K.P. Mikalkyavichyus spoke on some of the photoelectric properties of Sb_2S_3 and Sb_2Se_3: the absorption maximum of the latter is about $900\ m\mu$. S.M. Neyman reported on methods of obtaining selenium light-sensitive layers, including sublimation and thermal treatment; it was also found that the sensitivity of the layers increased after storage for 1.5 to 2 months at room temperature. P.M. Podvigalkin (speaking also for S.G.Grenishin) spoke on research into the electrical properties of electrophotographic layers of amorphous selenium and powdered zinc oxide. N.K. Shiktorov (speaking also for A.S. Tauraytis) discussed the production of selenium layers and some of their properties. Finally the following reports on ferromagnetography were delivered; 1) B.Ya. Kaznacheyev, V.M.Zhogina, "Electrodeposition of Magneto-Hard Alloys with Given Magnetic Characteristics" 2) M.T.Arutyunov, "Visualization of Magnetic Oscillograms by the Ferrographic Method" 3) V.T.Patrunov, "Ferrographic Recording of Facsimile Images" 4) I.I.Zhilevich, I.I. Gikis, B. Ye. Buchek, I.I. Kavnise, A.K.Kishkis, "Mock Experiments in Non-Pressure Ferromagnetic Printing". There was also an exhibition showing the work of the Electrographic Institute. The most important conclusion of the conference was that a solid approach had been made to the possibility of wide technical use of the methods of electrography. It was considered that although work in this field actually started only in 1955-55 it has covered as much ground as the USA in 10 years. While admitting that it was easier to reproduce results already achieved than to be the first to arrive at them, the conference observed that the Americans took good care that no important information appeared in the literature available.

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APOLLONOVA, L.P., red.; VAYMBOYM, V.S., red.; VASILEVSKIY, D.P., red.; VROBLEVSKIY, A.A., red.; GRIBKOVA, S.A., red.; GRIGORASH, G.L., red.; KAZNACHEY, B.Ya., red.; PARKHOMENKO, V.I., red.; PUSSET, L.A., red.; REGIRER, Ye.I., red.; ROZENBLAT, M.A., red.; MALKIEL', B.Z., red.

[Methods for testing magnetic tape recorders] Metodika ispytaniia magnitofonov. Moskva. 1958. 78 p. (Akademiia nauk SSSR. Morskoi gidrofizicheskii institut. Trudy, vol. 14). (MIRA 12:7)
(Magnetic recorders and recording--Testing)

ARNOL'D, R.R.; APOLLONOVA, L.P., red.; VAYNBOYM, V.S., red.; VASILEVSKIY, D.P., red.; VROBLEVSKIY, A.A., red.; GRIBKOVA, G.L., red.; GRIGORASH, G.L., red.; KAZNACHEY, B.Ya., red.; PARKHOMENKO, V.I., red.; PUSSET, L.A., red.; PEGIRER, Ye.I., red.; ROZENBLAT, M.A., red.; MALKIYEL', B.A., red.

[Magnetic heads for sound recording apparatus] Magnitnye golovki dlia apparatury zvukozapisi. Moskva, 1958. 153 p. (Moskva. Vsesoiuznyi nauchno-issledovatel'skii institut zvukozapisi. Trudy, no.3).
(MIRA 12:4)

(Magnetic recorders and recording--Equipment and supplies)

KAZNACHEY B. YA.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.
Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and O.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodepositon and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Agladze, R.I. Hydrometallurgical Production of Manganese and Chromium 493

Titov, P.S., and Z.A. Tubyankina (Institut tsvetnykh metallov i zolota imeni M.I. Kalinina-Institute of Nonferrous Metals and Gold imeni M.I. Kalinin). Cathodic Process During the Deposition of Tin From Halogen Electrolytes 498

Polukarov, M.N. (Permskiy Gosudarstvennyy universitet-Perm' State University). Hydrogen Absorption by Steel Cathodes in the Metal Electrodeposition Process 502

Zhogina, V.M., and B. Ya. Karnachev. Electrodeposition of Hard Magnetic Alloys 506

Kadaner, L.I., and A. Kh. Masik (Pedagogicheskiy institut Institut sovetskoy torgovli, Khar'kov-Pedagogical Institute; Institute of Soviet Trade). Mechanism of Electrolytic Deposition of Metals Onto a Passivated Surface 512

Card 20/34

23600

18.1140 also 1087, 1160

S/081/61/000/008/008/017
B110/B203

AUTHORS: Kaznachey, B. Ya., Zhogina, V. M.

TITLE: Electrodeposition of highly coercive alloys

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1961, 336, abstract 8K199 (8K199) (Tr. Vses. n.-i. in-ta zvukozapisi, 1959, vyp. 6, 119-135)

TEXT: The authors indicate the electrolytic compositions as well as the deposition conditions of Co-Ni-P and Co-W alloys. They investigate the effect of composition and conditions of electrolysis on the properties of the alloys. They found that the presence of NH_4 and $NaPO_2$ in the solution was necessary for making a highly coercive alloy. [Abstracter's note: Complete translation.]

Card 1/1

S/081/61/000/008/009/017
B110/B203

AUTHOR: Kaznachey, B. Ya.

TITLE: Control of porosity of electrodeposited metals

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1961, 337 abstract 8K202 (8K202) (Tr. Vses. n.-i. in-ta zvukozapisi, 1959, vyp. 6, 137 - 138)

TEXT: Two control methods are suggested. By the first method, the metal investigated is precipitated on the basic metal which is covered with a separating layer. Then, the test metal is separated from the base as a galvanoplastic copy, and tested (visually or microscopically) for transparency by illuminating the back with a strong light source. By the second method, the metal investigated is precipitated on a transparent nonconductor which is covered with a non-conducting layer. After reaching the required layer thickness, the transparency is tested while the metal is not separated from the transparent base. Dimension, configuration, distribution, and number of through-going linear pores can be determined. [Abstracter's note: Complete translation.]

Card 1/1

KAZNACHEY, B.Ya.; OSTROVSKAYA, R.S.

Experience in protecting master recordings from corrosion. Trudy VNAIZ no.7:104-106 '60. (MIRA 14:4)
(Sound--Recording and reproducing) (Phonorecords)

S/081/61/000/024/051/086
B107/B110

AUTHORS: Kaznachey, B. Ya., Zhogina, V. M., Pochtareva, V. I.

TITLE: Effect of the electrolysis conditions on the shape of the hysteresis loop in the electrodeposition of magnetically hard alloys

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 344 - 345, abstract 24K132 (Tr. Vses. n.-i. in-ta zvukozapisi, no. 8, 1961, 61 - 86)

TEXT: The production conditions of magnetically hard alloys (Co - Ni, Co - Ni - P and Co - W) with a widely varying range of the magnetic properties (coercive force 100 - 80 oe, residual induction up to 6000 gauss) were studied. The orthogonality of the hysteresis loop can be changed by changing the electrolysis conditions (temperature, pH, current density and velocity of rotation of the cathode). It was impossible, however, to obtain deposits with an orthogonality close to 1. The orthogonality of the hysteresis loop of the deposits obtained is reduced under the follow-

Card 1/2

KAZNACHEY, B.Ya.; BALASHOVA, N.N.

Manufacture of the first original disk (stamper) from a recording disk. Trudy VNAIZ no.5:97-109 '59. (MIRA 15:4)
(Phonorecords)

KAZNACHEY, B.Ya.; PODGAYSKAYA, L.N.; PONOMAREVA, O.V.; SEMENCHUK, O.V.

Observations on the phonorecord error "displacement of grooves."
Trudy VNAIZ no.5:110-115 '59. (MIRA 15:4)
(Phonorecords)

KAZNACHEY, B.Ya.; BALASHOVA, N.N.; ROZHDESTVENSKAYA, A.K.

Electrodeposition of nickel from sulfamine electrolytes with low internal voltages. Trudy VNAIZ no.9:157-168 '61. (MIRA 15:9)
(Nickel—Plating) (Phonorecords)

KAZOVSKAYA, B. YA.

AID Nr. 976-7 24 May

CORROSION OF MOLYBDENUM (USSR)

Gintsberg, S. A., and B. Ya. Kazovskaya. Tsvetnyye metally, no. 3, Mar 1963, 84-86. S/136/63/000/003/004/004

The corrosion behavior of commercial-grade Mo (bars 15 x 15 x 45 mm containing 0.015% sesquioxides, 0.01% S, 0.001% P, and 0.5% W) in atmospheres with 60 to 96% relative humidity at 15, 25, and 35°C has been studied. Tests lasted for up to 180 days. The corrosion rate at 25° C and 60% relative humidity for 30 days was close to 0, but then increased steadily and after 180 days reached approximately 30 mg/m^2 · day. With increasing relative humidity the corrosion rate increased slowly, generally remaining below 80 mg/m^2 day for a relative humidity of up to 88%. At 96% humidity the corrosion rate increased sharply to ~690 mg/m^2·day in the first 30 days, then dropped to 265 mg/m^2 · day after 150 days and increased again to 340 mg/m^2· day after 180 days. A similar pattern, i. e., a drop in the corrosion rate during the first 100 days, was observed

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AID Nr. 976-7 24 May

CORROSION OF MOLYBDENUM [Cont'd] S/136/63/000/003/004/004

at humidities of 70 to 88%. An increase of test temperature from 15 to 35° C roughly doubled the corrosion rate at humidities up to 80%, bringing it to ~80 $mg/m^2 \cdot day$ at 35° C and 80% humidity. At a humidity of 96%, however, the corrosion rate jumped from 180 or 220 $mg/m^2 \cdot day$ at 15 or 25° C, respectively, to 675 $mg/m^2 \cdot day$ at 35° C. Additions of sodium nitride and sodium benzoate, which are effective as inhibitors of steel corrosion, had a negative effect in the case of molybdenum; both were found to accelerate corrosion. It can be assumed that the oxide film which forms on Mo in humid atmospheres is non-protective. [WW]

Card 2/2

L 52092-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWT(m)/EEC(t)/T/EWP(v) Pc-4/Pi-4/
[illegible] IJP(c) GG/WW/RM
[illegible]ION NR: AP5015281 UR/0286/65/000/009/0065/0065

[illegible]sberg, I. I.; Teryayeva, I. M.; Kazn[illegible]; [illegible]uvalova, M. A.

[illegible]

[illegible]

[illegible], roughness, metallizing, [illegible]

[illegible] Author Certificate presents a method [illegible] dielectric [illegible]llization. To obtain [illegible] the desired uniformity and [illegible] the surface [illegible] coated with an adhesive layer [illegible]

[illegible]

tekhnologii radioveshchaniya i televideniya (All-Union Scientific Research Institute of Magnetic Recording and the Technology of Radio and Television Broadcasting)

SUBMITTED: 03Dec63 ENCL: 00 SUB CODE: EM

NO REF SOV: 000 OTHER: 000

Card 1/1

KAZNACHEY G. YA.

CA

11 D

Stimulation of biosynthesis of ascorbic acid in injured potato tubers. S. I. Vinokurov and G. Ya. Kaznachei (Ukrainian Nutrition Inst., Kiev). *Biokhimiya* 12, 350-5 (1947); cf. *C.A.* 38, 5607^{4}; 41, 2776i.—About 10 g. of cut potatoes, 1.2-1.5 g. per slice, and 3-5 mm. thick, was placed under a bell jar (vol. 23 l.) in 6 open dishes, including a dish of 25 g. ground garlic. In the presence of the garlic vapors, the ascorbic acid content of the injured potato tubers increased up to 81% as compared to the control. An analogous stimulating effect was observed when the garlic was replaced with H_2S. These S compds. act by suppressing the oxidative systems which would ordinarily destroy the ascorbic acid. H. Priestley

Vitamins Laboratory

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SVERSHKOV, I.V.; DOBRIYER, I.B.; KAZNACHEY, P.Ya.

Causes of beet-red staining in fermented vegetables. Vop.pit. 19 no.1:90-91 Ja-F '60. (MIRA 13:5)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta pitaniya Ministerstva zdravookhraneniya USSR, Kiyev.
(VEGETABLES)

L 44291-66 EWT(1)/EWT(m)/EWP(j) IJP(c) RO/RM

ACC NR: AR6013542 (A,N) SOURCE CODE: UR/0397/65/000/020/0056/0056

AUTHOR: Dukhan, D. S.; Davidan, R. G.; Kaznachey, R. Ya.; Medovar, B. Ya.

36

TITLE: New forms of synthetic materials used in the food industry and their hygienic evaluation

SOURCE: Ref. Zh. Farmakologiya. Toksikologiya, Abs. 20.54.425

REF SOURCE: Sb. Gigiyena. Kiyev, Zdorov'ya, 1964, 435-439

TOPIC TAGS: synthetic material, polyvinyl chloride, polyethylene plastic, ion exchange resin, food technology, plastic coating, food sanitation, food preservation

ABSTRACT: Sanitary hygienic evaluations of polycaprolactam, polystyrol, polyvinyl chloride (polychlorvinyl), polyethylene and ion exchange resins were conducted. Criteria for evaluating samples of these plastic products were absence of toxic substances passing into the various media (salt solutions, food acids, and weak alkali), absence of change in organic properties of the media, absence of increased acidity in the media, and absence of visible changes in the samples (color, shape, etc). The following were rated favorable: low pressure polyethylene for use in anticorrosive coatings for metallic food vessels, polystyrol for food

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Card 1/2 UDC: 615.9

L 44291-66

ACC NR: AR6013542

containers and dishes, and anionite EDE-10p which eliminates almost all foreign organic and nonorganic substances from sugar beet juice. Excessive amounts of plasticizer should be avoided in the manufacture of polychlorvinyl products. Then, it can be used in contact with food products. N. Popov. [Translation of abstract].

SUB CODE: 06, 11

Card 2/2 mjs

SNIGUR, Mariya Ivanovna; RADCHENKO, Mariya Fedorovna; KAZNACHEY, R.Ya.,
red.; BYKOV, N.M., tekhn. red.

[Hygienic evaluation of honey and methods for its study]
Gigienicheskaia otsenka meda i metody ego issledovaniia.
Kiev, Gls. med. izd-vo USSR, 1961. 67 p. (MIRA 15:4)
(HONEY)

KAZNACHEYEV, A

KAZNACHEYEV, A.
Institute of Radio Techniques and Electronics, USSR Academy of Sciences, Moscow

"Some Problems in Long Distance Communications Using Wave Guides".

paper presented at Internaltional Congress on Ultra High Frequency Circuits and Antennas, Paris, 21-26 Oct 1957.

KAZNACHEYEV, A.

On the eve of complete electrification. Sel'.stroi. 15 no.4: 3-5 Ap '60. (MIRA 16:1)

1. Upravlyayushchiy Ryazanskim oblastnym stroitel'no-montazhnym trestom "Sel'elektrostroy".
(Ryazan Province—Rural electrification)

KAZNACHEYEV, A.

Conducting the examinations for occupational categories.
Prof.-tekh. obr. 20 no.12:27-28 D '63. (MIRA 17:1)

1. Zamestitel' nachal'nika otdela tekhnicheskogo obucheniya Elektrostal'skogo zavoda tyazhelogo mashinostroyeniya, Moskovskaya obl.

KAZNACHEYEV, Aleksandr Arkhipovich; SLAVNITSKAYA, N.N., red.
AZOVKIN, N.G., tekhn. red.

[Electrification of farms in Ryazan Province]Elektrifikatsiia riazanskogo sela. Riazan', Riazanskoe knizhnoe izd-vo, 1961.
(MIRA 16:1)

1. Nachal'nik upravleniya Moskovskogo stroitel'no-montazhnogo tresta Glavnogo upravleniya elektrifikatsii sel'skogo khozyaystva Ministerstva sel'skogo i gorodskogo stroitel'stva RSFSR (for Kaznacheyev).
(Ryazan Province—Rural electrification)

FUDIM, A.M. (Kazan'); KAZNACHEYEV, A.A. (Kazan')

40th anniversary of the pharmaceutical industry in the Tatar A.S.S.R. Kaz.med.zhur. no.5:95-96 S-O '62. (MIRA 16:4)
(TATAR A.S.S.R. —DRUG INDUSTRY)

KAZNACHAYEV, A.M.

USSR /Chemical Technology. Chemical Products and Their Application I-15

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31832

Author : Eydel'man A. Ye., Kaznacheyev A. M.

Title : Causes of Emulsification of Naphthalene Oil

Orig Pub: Koks i khimiya, 1956, No 4, 53-54

Abstract: A study was made of the effect of various admixtures in the naphthalene oil, and an analysis was also made of the emulsion which is formed in large amounts on shaking with alkali. The investigations revealed that formation of emulsion is due to Fe, which is formed as a result of corrosion of the equipment, when its content in the oil exceeds 0.01%. In order to prevent

Card 1/2

USSR /Chemical Technology. Chemical Products and Their Application I-15

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31832

corrosion during distillation of the tar, an addition of more than 0.05% of soda must be made, so that the water extract of the tar after the first stage of heating has a pH value within the limits of 7.3 to 7.5.

Card 2/2

KAZANCHEV, V. A. M

17

PHASE I BOOK EXPLOITATION SOV/5658

Ivanov, Aleksandr Petrovich, Candidate of Technical Sciences, and Viktor Dmitriyevich Lisitsyn, Candidate of Technical Sciences, eds.

Modernizatsiya kuznechno-shtampovochnogo oborudovaniya (Modernization of Die-Forging Equipment) Moscow, Mashgiz, 1961. 226 p. Errata slip inserted. 10,000 copies printed.

Reviewer: V. Ye. Nedorezov, Candidate of Technical Sciences; Ed. of Publishing House: T. L. Leykina; Tech. Ed.: A. A. Bardina; Managing Ed. for Literature on Machine-Building Technology (Leningrad Department, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for foremen, machinists, designers, and process engineers concerned with the modernization and designing of die-forging equipment. It may also be used by students at schools of higher education.

COVERAGE: The book contains material presented at the Conference

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Modernization of Die-Forging Equipment SOV/5658

on Problems in the Modernization and Operation of Die-Forging Equipment, held in November 1958 in Leningrad. The Conference was called by Leningradskiy Sovet narodnogo khozyaystva, Sektsiya obrabotki metallov davleniyem Leningradskogo oblastnogo pravleniya NTO Mashprom (Leningrad Council of the National Economy, Section of Metal Pressworking at the Leningrad Oblast Board of the Scientific and Technical Society of the Machine Industry) and Leningradskiy mekhanicheskiy institut (Leningrad Mechanical Engineering Institute). Actual problems in the modernization, operation, and repair of die-forging equipment are described. Analyses are provided for problems involved in the mechanization and automation of die-forging and stamping operations. Also included are practical data to be used in the modernization of equipment. No personalities are mentioned. There are 59 references: 56 Soviet, 2 German, and 1 English.

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Modernization of Die-Forging Equipment

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3. Methods and means for the experimental investigation of die-forging equipment (V. I. Zaytsev and M. P. Pavlov, Candidates of Technical Sciences) 203

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11-7-61

Card 8/8

KAZNACHEYEV, A.N.

In Odessa Province. Zashch. rast. ot vred. i bol. 6 no.3:48-49
Mr '61. (MIRA 15:6)

1. Odesskoye oblastnoye upravleniye sel'skogo khozyaystva.
(Odessa Province—Plants, Protection of)

BOSHNYAK, L.L.; BYZOV, L.N.; KAZNACHEYEV, B.A.

Experimental determination of the time constant of vane-tachometer converters of flowmeters. Izm.tekh. no.2:58-60 F '62.
(MIRA 15:2)

(Flowmeters--Testing)

39745
S/115/62/000/007/007/008
E194/E455

26 2/91

AUTHORS: Boshnyak, L.L., Byzov, L.N., Kaznacheyev, B.A., Luk'yanov, G.A.

TITLE: The calibration of turbine-tachometer flow meters

PERIODICAL: Izmeritel'naya tekhnika, no.7, 1962, 45-49

TEXT: Despite the simplicity of turbine-tachometer flow meters, equations for the motion for the indicator rotor remain approximate, mainly because the external load on the rotor is small and so peculiarities of rotor design or flow structure become decisive. Accordingly, generalized calibration curves are plotted experimentally on the basis of the theory of similarity. Previous work on this theory has introduced unnecessary complications on the one hand and has omitted important matters on the other. The initial and boundary conditions for the steady-state process are considered. The two simplest dimensionless criteria of similarity are

$$\pi_1 = \frac{nd^3}{Q} \quad \text{and} \quad Re = \frac{\rho Q}{\mu d} \qquad (1)$$

where n - rotor speed; d - effective diameter; Q - flow rate;

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E194/E455

The calibration of ...

ρ - density; μ - viscosity. A relationship between Re and π_1 is inconvenient to use and so Re is replaced by its analogue which is obtained by multiplying Re by π_1

$$\pi_2 = \frac{\rho\, nd^2}{\mu} = \frac{nd^2}{\nu} \qquad (2)$$

The calibration curve is then obtained in the form of π_1 as function of π_2. For high flow-rates in particular, the boundary conditions must be extended because, for example, eddy-current losses in leads are proportional to the square of rotor speed. Accordingly, the following criterion is introduced

$$\pi_3' = \frac{k}{\rho Q d^2} \qquad (4)$$

In this equation k is a coefficient of proportionality, constant for a given design of tachometer, which depends on the magnetic field intensity, the dimensions of the current-carrying parts and the properties of their materials. It can be determined experimentally and then when working on liquids of

Card 2/ 4

The calibration of ...

S/115/62/000/007/007/008
E194/E455

relatively low viscosity the following expression can be used

$$\pi_3 = \frac{\gamma_0 Q_0}{\gamma Q} \qquad (6)$$

where γ_0 is the specific gravity of the calibrating liquid used to determine the flow rate Q_0.
If the rotor is heavy, a further criterion π_4 must be introduced to allow for bearing friction. Tests were made with three different designs of flow meter, which are described. The tests were made at room temperature (18 to 20°C) using water, water-glycerine solutions and mixtures of benzene and of kerosene with oil grade СУ (SU). The physical properties of the fluids varied within the following ranges: kinematic viscosity from 7 to 150 cm^2/sec, density from 0.7 to 1.2 g/cm^2. The tests were made with a special hydraulic rig in which measurements could be made under steady-state flow conditions measured to within ± 0.015 cm^3/sec whilst the frequency of the signal to the receiving instrument could be measured to an accuracy of ± 0.35 c/s.
Card 3/4

S/115/62/000/007/007/008
E194/E455

The calibration of ...

Calibration curves for the three flow meters are plotted. Individual points had a scatter of up to 3% mainly because of errors in determining liquid viscosity. For one design of flow meter the criteria π_1 and π_2 satisfactorily describe the effects on changing the viscosity but tests with the other two flow meters showed that with their design of generator the criterion π_3 is important. For these designs, above a certain critical value of π_2, changes of viscosity cease to influence the flow meter readings. The effects of various changes in flow-meter design are briefly described. It is concluded that the recommended calibration equations are satisfactorily confirmed by the experimental data. The work reveals prospects for designing turbine-tachometer flow meters which, within their working range, are insensitive to fluid viscosity and so to fluid temperature. If calibration curves are constructed for existing designs of turbine-tachometer flow meters, the readings may be corrected for fluid viscosity and density. Extensive work is required on the design of generators for turbine-tachometer flow meters. There are 5 figures and 1 table.

Card 4/4

BOSHNYAK. L.L.; BYZOV, L.N.; KAZNACHEYEV, B.A.; LUK'YANOV, G.A.

Calibration of turbine-tachometer-type flowmeters. Izm.tekh. no.7: 45-49 Jl '62. (MIRA 15:6)
(Flowmeters)

KAZNACHEYEV, G. A., Institute of Radio Techniques and Electronics, USSR Academy of Sciences, Moscow

"Quelques questions de la liaison a grande distance par guides d'ondes," a paper submitted at the International Congress on Ultra High Frequency Circuits and Antennas, Paris, France, 21-26 Oct 57.

SO: C-3,800,391

KAZNACHEYEV I.M.

KHARITONOV,S.I.; SHTUMPF,A.G.; GREK,A.V.; TSYMBALYUK,A.G.; KAZNACHEYEV,
I.M.; BOGACHEVA,A.G.

Response to V.D.Avramenko's article "For a fundamental change in the system of standardizing the quality of coal" ("Ugol'" no.2. 1955). Ugol' 30 no.9:43-45 S'55. (MLRA 8:12)

1. Trest Molotovugol' kombinata-Kuzbassugol' (for Kharitonov)
2. Shakhta "Kapital'naya-1" tresta Molotovugol' (for Shtumpf)
3. Nachal'nik Otdela standartizatsii Vsesoyuznogo nauchno-issledovatel'skogo instituta Ugleobogashcheniya (for Grek)
4. Toplivnaya inspektsiya M.P.S. po Kuzbassu "Sibtranstop" (for TSymbalyuk and Kaznacheyev) 5. Nachal'nik Otdela tekhnicheskogo kontrolya shakhty no.4 "Yurkovskaya" (for Bogacheva)

(Coal--Standards) (Avramenko,F.D.)

LESHCHENKO, P.D.; KHOROSHILOVA, N.V.; SLIPCHENKO, L.M.; KAZNACHEY, R. Ya.

Observation of Haff-Uchs disease cases. Vop. pit. 24 no. 6: 73-76 N-D '65 (MIRA 19:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut pitaniya (direktor - kand. med. nauk P.D. Leshchenko), Kiyev.

KAZNACHEYEV, V.P.

21(8) PHASE I BOOK EXPLOITATION SOV/1764

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniy v narodnom khozyaystve i nauke Moscow, 1957.

Trudy... Mashinostroyeniye i priborostroyeniye (Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science; Machine and Instrument Manufacturing) Moscow, Izd-vo AN SSSR, 1958. 358 p. 4,500 copies printed.

Sponsoring Agencies: USSR. Glavnoye upravleniye po ispol'zovaniyu atomnoy energii, and Akademiya nauk SSSR.

Editorial Board of Set: V.I. Dikushin, Academician (Resp. Ed.), N.N. Shumilovskiy (Deputy Resp. Ed.), Yu. S. Zaslavskiy (Deputy Resp. Ed.), L.K. Tatochenko, B.I. Verkhovskiy, S.T. Nazarov, L.I. Petrenko and N.G. Zelevinskaya (Secretary).

Ed. of Publishing House: P.N. Belyanin; Tech. Ed.: T.P. Poleneva.

PURPOSE: This book is intended for specialists in the field of machine and instrument manufacture who use radioactive isotopes in the study of materials and processes.

COVERAGE: This collection of papers covers a very wide field of the utilization of tracer methods in industrial research and control techniques. The topic of this volume is the use of radioisotopes in the machine- and instrument-manufacturing industry. The individual papers discuss the applications of radioisotope techniques in the study of metals and alloys, problems of friction and lubrication, metal cutting, engine performance, and defects in metals. Several papers are devoted to the use of radioisotopes in the automation of industrial processes, recording and measuring devices, quality control, flowmeters, level gauges, safety devices, radiation counters, etc. These papers represent contributions of various Soviet institutes and laboratories. They were published as Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science, April 4-12, 1957. No personalities are mentioned. References are given at the end of most of the papers.

Yudin, A.I. (Khar'kovskiy aviatsionnyy institut – Khar'kov Aviation Institute). Study of the Wear of Parts in Fuel Supply Systems of Aircraft Engines 78

Vysotskiy, D.I., G.I. Beloglazov, V.I. Golov, V.P. Kaznacheyev, and Yu. G. Mochalov (Tsentral'nyy nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut – Central Scientific Research Institute for Automobiles and Automotive Engines). Mobile Road-test Laboratory for the Study of the Effect of Dust in Air and the Type of Air Filter on the Wear of Piston Rings in Engines 82

Malik-Zade, M. (Azerbaydzhanskiy nauchno-issledovatel'skiy institut po neftepererabotke – Azerbaydzhan Scientific Research Institute for Petroleum Refining). Apparatus for the Study of Film Formation on Friction Surfaces 86

Kalinovskiy, O.Ye. (Tsentral'nyy nauchno-issledovatel'skiy dizel'nyy institut – Central Diesel Research Institute). Scintillation Counter for the Measurement of Radioactivity in Liquids 89

Karakov, M.F. (Institut mashinovedeniya AN SSSR – Institute of Mechanical Engineering, Academy of Sciences, USSR). Research on Metal Cutting 94

Lazebnik, B.D. (Institut mashinovedeniya AN SSSR – Institute of Mechanical Engineering, Academy of Sciences, USSR). Study of the Wear of Hard-alloyed Cutting Tools 101

Yakovlev, G.N. (Belorusskiy politekhnicheskiy institut – Belorussian Polytechnical Institute). Study of the Wear of Cutting Tools 105

KAZNACHEYEV, V. P.

"The Role of the Nervous System in the Permeability of Blood Capillaries During Certain Physiological and Pathological Conditions." Cand Med Sci, First Moscow Medical Inst, Novosibirsk, 1954. (RZh Biol, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

USSR / General Problems of Pathology. Pathophysiology U
of Infection.

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41926.

Author : Zalesskiy, G. D., Kaznacheyev, V. P. Belov, G. F.
Inst : Novosibirsk Medical Institute. - Chair of Faculty Therapy.
Title : On the Presence of Specific Antigens in the Blood of Rheumatic Patients.

Orig Pub: Tr. Novosibirskogo med. in-ta, 1957, 27, 39-47.

Abstract: Guinea pigs were sensitized with serum from patients acutely ill with rheumatism (SR). Twenty to twenty-two days later, desensitization with serum of healthy subjects (SH) was carried out. No apparent anaphylactic reaction was observed when, on the following day, SH was injected into the heart; however, intracardial injection of the same 20 guinea pigs with SR (0.1ml) 2 hours later,

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USSR / General Problems of Pathology. Pathological Physiology of Infectious Processes. U-3

Abs Jour : Ref Zhur - Biol., No 17, 1958, No 80268

Author : Kaznacheyev, V. P.
Inst : Not given
Title : Results of Innoculation of Rabbits in the Posterior Wall of the Pharynx with a Material Obtained from Rheumatic Patients. Preliminary Report.

Orig Pub : Tr. Novosibirskogo med. in-ta, 1957, 27, 48-62.

Abstract : 0.5 ml of serum or blood of rheumatic patients were introduced under the mucosa of the posterior wall of the pharynx with either a serum treated by hyaluronidase or with a water extract of the heart of a rheumatic patient. fter ten days the rabbits were prepared. In almost all, a focused interstitial myocarditis developed of an exudative-proliferative character. Especially expressed changes (endocarditis,

Card 1/2 Chair of Faculty Therapy, Novosibirsk Med. Inst.

KAZNACHEYEV, V.P., assistent, kand.med.nauk

Possible participation of the chemoreceptors of the oral cavity and pharynx in the pathogenesis of rheumatic fever. Trudy Novosib. gos.med.inst. 27:63-73 '57. (MIRA 12:9)

1. Iz kafedry fakul'tetskoy terapii (zav.kafedroy prof. G.D. Zalesskiy) Novosibirskogo meditsinskogo instituta.
(RHEUMATIC FEVER) (RECEPTORS (NEUROLOGY))

KAZNACHEY USSR/Human and Animal Physiology. General Problems. T

Abs Jour: Ref Zhur-Biol , No 8, 1958, 36082.

Author : Kaznachaev, V.P
Inst : Novosibirsk Medical Institute - Chr. of Faculty Therapy
Title : Study of Capillary Permeability in Healthy Men by the Method of Conditional Reflexes

Orig Pub: Tr Novosibirskogo Med in-ta, 1957, 27, 279-286

Abstract: Refractometric and hematocrit indices of blood, obtained from a vein and a fingertip, following its emersion in hot water (40-45°C) for 30-60 seconds, were compared. This method is free of errors existing in the accepted methods of determination of capillary permeability (C.P.) (Landis, Ortinov and Semiglazova). Six healthy men were investigated, in whom, by association of sound with a local hot bath,

Card : 1/2

ZALESSKIY, G.D., prof., VOROB'YEVA, N.N., prof., PIROGOVA, O.I., SHURIN, S.P.
KAZNACHEYEV, V.P., YAVOROVSKAYA, B.Ye., FEDOROV, A.I., MOSOLOV, A.N.

Specific agent inducing rheumatic fever. Report No.1: Some data on a filtrable virus isolated in rheumatic fever. Terap. arkh. 30 no.5:3-15 My '58 (MIRA 11:6)

1. Iz Novosibirskogo meditsinskogo instituta.
(RHEUMATIC FEVER, microbiology,
isolation & infect. of animals with specific virus (Rus))
(VIRUSES,
isolation & infect. of animals with specific rheum. virus (Rus))

KAZNACHEYEV, V.P. (Moskva); SUKHNEV, V.A. (Moskva)

Using high-sensitive singl-component torsion balance for measuring ninor forces in rarefied gas aerodynamics. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.1:154-156 Ja-F '63. (MIRA 16:2)

(Torsion balance)

PROSKURYAKOV, Sergey Anatol'yevich; KAZNACHEYEV, V.P., doktor med. nauk, prof., otv. red.; VOLOSHIN, G.D., red.

[Experience in the work of restorative surgery on the face and otorhinolaryngeal organs] Opyt raboty po vosstanovitel'noi khirurgii litsa i lor-organov. Novosibirk, Zapadno-Sibirskoe knizhnoe izd-vo, 1965. 197 p. (MIRA 18:4)

KAZNACHEYEV, V.P. (Novosibirsk); KUZNETSOV, P.G. (Novosibirsk); NABIULIN, [illegible] (Novosibirsk); SUBBOTIN, M.Ya. (Novosibirsk)

Some problems of the quantum biology and problems of the communication of information in biological systems. Avtometriia no.2:3-10 '65. (MIRA 18:9)

L 32697-66 EWT(1) SCTB DD

ACC NR: AP6015232 (N) SOURCE CODE: UR/0410/65/000/002/0003/0010

AUTHORS: Kaznacheyev, V. P. (Novosibirsk); Kuznetsov, P. G. (Novosibirsk); Nabiulin, M. S. (Novosibirsk); Subbotin, M. Ya. (Novosibirsk)

65

B

ORG: none

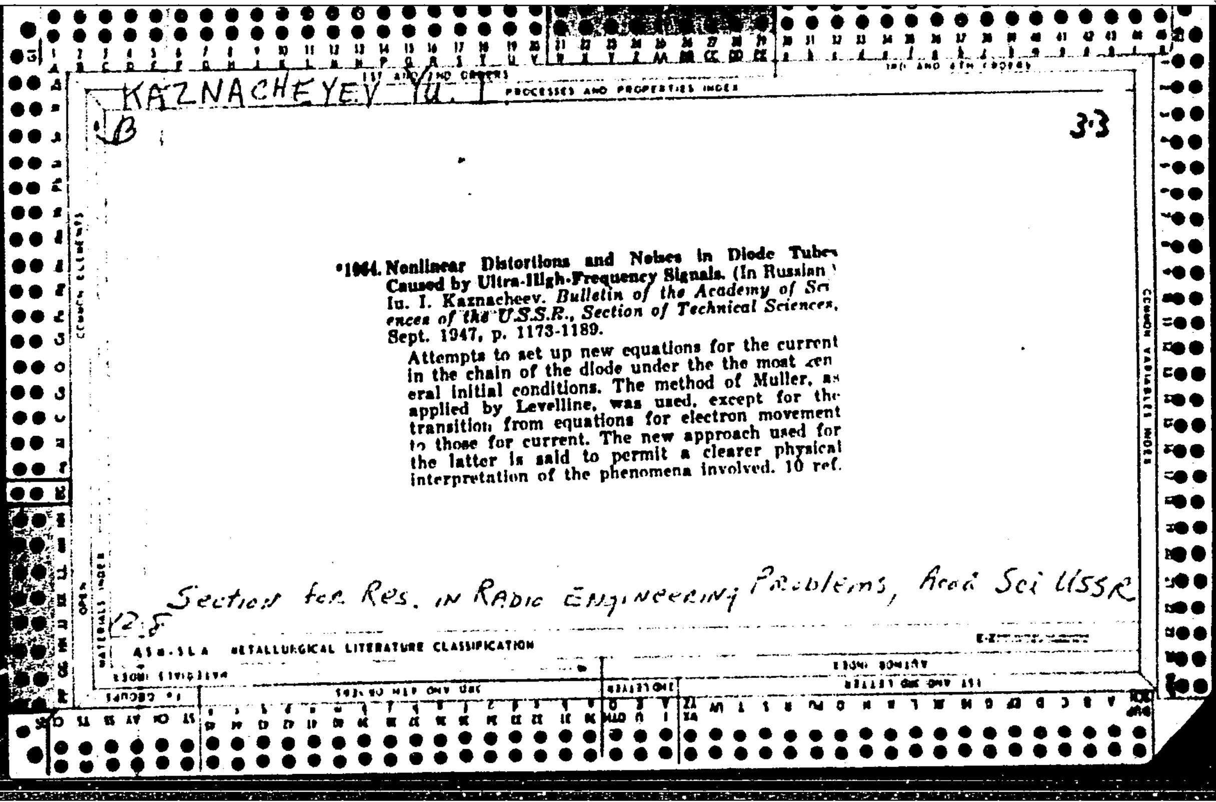
TITLE: Some problems of quantum biology and problems of information transmission in biologic systems

SOURCE: Avtometriya, no. 2, 1965, 3-10

TOPIC TAGS: biology, quantum theory, tissue physiology, cell physiology, information storage and retrieval, information theory, data transmission, photon, blood

ABSTRACT: Theoretical prerequisites for information transmission in biologic systems by means of quantum fluxes are given. The ultraweak luminosity of blood and a nerve is recorded with a photon counter. The problem includes mechanisms for coding various factors of the medium in quantum fluxes and recording this information in chemical structures and mechanisms for retrieving the recorded quantum information from the chemical structures and utilizing this information in enzymatic-synthetic processes. Comparison of data on physics, chemistry, and information theory with experiments in mitogenetic research indicates the possibility of the existence of a highly efficient system of information transmission

Card 1/2 UDC: 57+61:62.506.2



KAZNACHEYEV YU. I

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

B

3·3

•1064. Nonlinear Distortions and Noises in Diode Tubes Caused by Ultra-High-Frequency Signals. (In Russian.) Iu. I. Kaznacheev. *Bulletin of the Academy of Sciences of the U.S.S.R., Section of Technical Sciences*, Sept. 1947, p. 1173-1189.

Attempts to set up new equations for the current in the chain of the diode under the the most general initial conditions. The method of Muller, as applied by Levelline, was used, except for the transition from equations for electron movement to those for current. The new approach used for the latter is said to permit a clearer physical interpretation of the phenomena involved. 10 ref.

Section for Res. in Radio Engineering Problems, Acad Sci USSR

12.8

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR: Kaznacheyev, Yu. I. SOV-109-3-6-1/27

TITLE: Certain Problems in the Long-Distance Waveguide Communications (Nekotoryye voprosy dal'ney volnovodnoy svyazi)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 6, pp 731-743 and 2 plates (USSR)

ABSTRACT: The subject matter of this article was reported at the International Congress on Ultra High Frequency Circuits and Antennas in Paris, October 24, 1957. The work is primarily concerned with theoretical and experimental investigation of the suitability of waveguides for long distance communications. First, the propagation of H_{01}-waves in cylindrical multi-wave, all-metal waveguides is considered. Apart from the thermal losses at the walls, this type of waveguide is subject to additional losses caused by the so-called transformation phenomena; these are due to the waveguide discontinuities and irregularities and result in the appearance of parasitic waves (side flow). The additional losses for waveguides having diameters (2a) ranging from 18 to 80 mm and propagating wavelengths of 8 or 4 mm, were calculated for the following transformation irregularities: difference in the diameters of the individual sections, elliptical deformation, displacement of the axes of the individual sections

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Certain Problems in the Long-Distance Waveguide Communications SOV-109-3-6-1/27

and the angle-type bends of the waveguide axis. The results are shown in the table on p 732, from which it follows that the elliptic deformation and the angle bends lead to comparatively high losses. The side flow phenomena were also investigated, and the calculated results are given in Figs. 1, 2 and 3. Fig.1 shows the density of the side flow for H_{01}-waves as a function of the time lag for a waveguide having a diameter of 50 mm; the length of the individual sections is 5 m, the displacement of the axes is 0.05 mm, the length of the overall line is 10 km and the wavelength $\lambda = 8$ mm. Fig.2 shows the time lag of the side flow of the waves H_{11}; H_{12} and H_{21} as a function of their attenuation coefficient. The relative power of the partial side flows as a function of the attenuation coefficient (for the parasitic waves) for a waveguide of 100 km length is shown in Fig.3. One of the useful devices in the modern waveguide technique is the so-

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SOV-109-3-6-1/27

Certain Problems in the Long-Distance Waveguide Communications

called self-filtering waveguide whose internal walls are coated with a dielectric film. The performance of such a waveguide is illustrated by the curves of Fig.4, which show the attenuation for the waves H_{01}, H_{11}, E_{11} and E_{01}; the waveguide parameters are $a = 2.5$ cm, $\lambda = 3.2$ cm, $\delta = 0.01$ cm (the thickness of the dielectric film) and $\varepsilon' = 1$. The so-called "periodic" waveguides which consist of a number of metallic rings or helical turns have a number of useful properties. These are illustrated in Fig.5 which shows the relative losses of periodic waveguides (in relation to the losses in an all-metal guide) as a function of a parameter q which is defined as the ratio of the diameter of the guide to the period of the helix; Curve 1 refers to a square and Curve 2 to a circular cross-section of the conductor. The radiation losses in a helical waveguide are illustrated by Curve 1 of Fig.6; Curves 2 and 3 represent the additional losses in the guide. The additional attenuation for the H_{01}-wave in a helical waveguide provided with a dielectric sheath, as a function of the spacing between the turns is illustrated in Fig.7. The potential applicability of wave-

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PHASE I BOOK EXPLOITATION SOV/2135

Kaznacheyev, Yuriy Ivanovich

Shirokopolosnaya dal'nyaya svyaz' po volnovodam (Waveguide Broadband Long-distance Communication) Moscow, AN SSSR, 1959. 83 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Redkollegiya nauchno-populyarnoy literatury.

Resp. Ed.: V.I. Siforov; Ed. of Publishing House: A.N. Tsvetkov; Tech. Ed.: O.M. Gus'kova.

PURPOSE: This book is intended for junior engineers and technicians concerned with long-distance radio communication.

COVERAGE: The author describes the results of investigations on a new and highly efficient form of long-distance radio communication

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Waveguide Broadband (Cont.) SOV/2135

by waveguides. He demonstrates the possibility of creating waveguide lines of communication with a traffic capacity hundreds and thousands of times greater than the most highly developed of long-distance communication systems in use today. He states that a single waveguide long-distance line will soon be able to convey hundreds of television programs and any number of telephone conversations simultaneously. The author also describes the difficult problems, both theoretical and practical, which Soviet scientists are now trying to solve in this field. In the USSR this research is being carried out mostly by two organizations: Institut radiotekhniki i elektroniki Akademii nauk SSSR (IRE) (Institute of Radio Engineering and Electronics, Academy of Sciences, USSR) and Nauchno-issledovatel'skiy institut svyazi Ministerstva svyazi SSSR (Scientific Research Institute of Communications, Ministry of Communications, USSR). This book gives an account of the progress made in USSR and abroad. It also reports on the results achieved in the laboratory of the IRE under the author's supervision. No personalities are mentioned. There are 27 references: 11 Soviet, 11 English, 3 French, and 2 German.

Card 2/4

6(0)

AUTHOR: Kaznacheyev, Yu.I.

TITLE: Papers on a Waveguide Telecommunication

SOV/30-59-10-15/51

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 10, pp 68-71 (USSR)

ABSTRACT: The new building of the Institute of Radioengineering and Electronics of the Academy of Sciences of the People's Republic of China in Peking was finished in 1958. A group of Soviet scientists was sent to China in 1958 to assist in the development of this reseach work. A conference was held in Peking to discuss the projects; the members of the conference were representatives of provincial scientific-technical Committees, the universities, the Post-Office and Telecommunication Ministry, the Ministry of Railroads, the research institutes of cable industry, of radio industry and other firms. The members discussed the scientific program of the Chinese scientists in connection with the problem of a waveguide telecommunication; the organization of this work was also checked. After the conference had been finished a number of lectures were delivered and laboratory work was carried out according to the program of the Soviet scientists dealing with the development and testing of waveguide elements

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Papers on a Waveguide Telecommunication

SOV/30-59-10-15/51

and measuring instruments; M.V. Persikov also assisted in the work. Huang Wu-han visited the USSR this April and announced that for the purpose of directing all the work in connection with waveguide telecommunication a committee has been formed in the People's Republic of China consisting of representatives of the Academy of Sciences, the Post-Office and Telecommunication Ministry, the Ministry of Railroads, radio industry and other organizations. The Central Laboratory of Peking has the scientific direction and is under the direct control of the afore-mentioned committee. Waveguide measurement lines were made which allow to determine losses in circular waveguides in the range of centimeter waves (Figs 1 and 2) according to plans of the Institutes of Radioengineering and Electronics of Shanghai, and Sian. A waveguide line of 200 m length has now been finished in Shanghai. The Chinese and Soviet scientists concluded an agreement on the standardization of the dimensions of waveguides and their elements as well as on the pertinent measuring methods. An experimental waveguide line of several hundred km length is to be laid in the People's Republic of China. Further intensification of the collabora-

Card 2/3

KAZNACHEYEV, Yu. I.

PHASE I BOOK EXPLOITATION SOV/4411

Konferentsiya po voprosam teorii i primeneniya diskretnykh avtomaticheskikh sistem, Moscow, 1958

Teoriya i primeneniye diskretnykh avtomaticheskikh sistem; trudy konferentsii (Theory and Application of Discrete Automatic Systems; Transactions of the Conference) Moscow, AN SSSR, 1960. 572 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Natsional'nyy komitet SSSR po avtomaticheskomu upravleniyu. Institut avtomatiki i telemekhaniki.

Editorial Board: M.A. Gavrilov, Doctor of Technical Sciences, Yu.V. Dolgolenko, Doctor of Technical Sciences, V.A. Kotel'nikov, Candidate of Technical Sciences, A.Ya. Lerner, Doctor of Technical Sciences, I.S. Morosanov (Scientific Secretary), G.S. Pospelov, Doctor of Technical Sciences, A.A. Fel'dbaum, Doctor of Technical Sciences, A.V. Khramoy, Candidate of Technical Sciences, and Ya.Z. Tsypkin, Doctor of Technical Sciences; Resp. Ed.: Ya.Z. Tsypkin, Doctor of Technical Sciences; Ed. of Publishing House: M.L. Podgoyetskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: These transactions are intended for the members of the conference and other specialists in automatic control.

COVERAGE: The Conference on the Problems of Theory and Application of Discrete Automatic Systems took place in Moscow from September 22 to 26, 1958. It was the first conference devoted to discussions of the present status of the theory and techniques of discrete automatic systems and to planning for future development. The papers discussed at the conference have been divided into four groups. In the first group optimization switching circuits are discussed as well as methods of relay control systems. In particular plant lag control systems in which are realized optimal processes as to quick response. The second group of papers is devoted to the analysis and synthesis of pulse systems with variable parameters, of pulse systems with several pulse components, to the study of self-oscillation phenomena in nonlinear pulse systems, and to the methods of calculating linear pulse systems. Problems of simulating pulse systems and descriptions of some pulse regulators have also been included. The third group of papers deals with digital systems. Problems of using elements of digital technique and digital computers for the automation of various fields of engineering, i.e., power engineering, mining, radio communication, metallurgy, etc., are discussed. Problems of analog-digital conversion and vice versa as well as problems of developing specialized functional converters have been included in this group. The [illegible] group of papers includes theoretical elements and certain practical [illegible] of the simplest types of self-adjusting systems, optimalizing control [illegible] which are developed as relay, pulse and digital devices. Here are [illegible] papers describing various methods of investigating steady state [illegible] optimalizing systems, results of studying the effects of random [illegible] process of automatic scanning, and examples of existing optimalizing [illegible] systems. Some of the more interesting communications and observations made during the discussion of the various conference papers have also been included in the Transactions. Personalities and references accompany most of the papers.

Gitis, E.I. (Moscow). Suggestions for the Classification of Analog-to-Digital Converters 323
There is 1 Soviet reference.

Mikhaylov, I.I. (Gorlovka, Stalinskaya Oblast'). Transmitter of the Angle of Rotation of a Multiturn Axle 326
The author describes the transmitter according to the author's certificate issued in his name. There is 1 Soviet reference.

Kaznacheyev, Yu.I., N.A. Kolesnikova, and Yu.N. Prozorovskiy (Moscow). High-Speed Electric Vacuum Devices Converting Continuous Data Into Discrete and Vice Versa for Use in Wideband Systems of Communication Transfer With Pulse-Code Modulation 329
The authors describe coding, decoding, and regenerating cathode-ray devices used in pulse-code modulation systems. There are 5 references: 2 Soviet and 3 English.

Yermilov, B.L. (Leningrad). Some Types of Digital Function Generators 339
The author investigates the structure of a square-law function generator and of a pulse device for extracting square roots. There are 6 references: 2 Soviet and 4 English.

S/030/60/000/02/009/040
B008/B014

AUTHOR: Kaznacheyev, Yu. I.

TITLE: Telecommunication by Means of Waveguides 25

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, Nr 2, pp 67-73 (USSR)

ABSTRACT: In this article the author describes the possibilities of meeting the increasing demand for telecommunications. This problem can be solved in two ways. One method is based on cosmic transmission by means of artificial satellites, and the other method uses broadband waveguide telecommunications. However, the first method requires further investigations for several years. Investigations carried out by the Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics of the Academy of Sciences, USSR) showed that the second method could be realized earlier. Broadband telecommunication is effected by means of underground waveguide lines of a high degree of transmissivity. Noiseproof modulations may be used for this purpose, whereby the transmission of a large amount of information over large distances is warranted. The block diagram of a waveguide telecommunication line is shown in figure 1. Energy transfer can be effected only on waves with a certain configuration of the electromagnetic field (Fig 2). Figure 3 illustrates the characteristics of extinction of

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9,1300 (also 3301, 1130)

21329
S/106/60/000/010/004/006
A055/A033

AUTHOR: Kaznacheyev, Yu. I.

TITLE: Waveguide lines with small losses

PERIODICAL: Elektrosvyaz', no. 10, 1960, 47 - 52

TEXT: The present article is a general survey on the research works recently undertaken, not only in the USSR, but in the whole world - and especially in the USA, England, France, the German Federal Republic, Japan and China - in the new and promising field of longdistance transmission through waveguide-lines. The author of the article emphasizes that researches in the above enumerated countries seem to have followed parallel ways and that the results obtained until now are essentially similar everywhere. The author examines in particular the results achieved in the study of the propagation conditions of H_{01} waves in all-metal waveguides with smooth metal walls. He states, for instance, that all the fundamental discontinuities in the line (bends, joints etc.) have been thoroughly investigated, and that the admissible deviations of the waveguide form from the

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ideal geometric forms - deviations ensuring small losses and small distortions of the transmitted signal - have been determined. The conclusion reached by the investigators in all countries is that the realization of waveguide-lines of complicated configuration is exceedingly difficult with waveguides having smooth metal walls. Considerable energy losses would be unavoidable in such lines, owing to changes in the direction of the axis. It has been suggested by V.V. Malin, (Ref. 12: Effect of a Semiconductor Film on the Attenuation of Radiowaves in Circular-Section Waveguides, Radiotekhnika i Elektronika, vol. 1, No. 1, 1956) that the inner surface of waveguides with smooth metal walls should be provided with a film of a dielectric substance allowing to increase considerably the attenuation of spurious waves and to reduce substantially the phase-velocity of E_{11} waves, eliminating thus the conversion of H_{01} waves into E_{11} waves. The second part of the article deals with helix waveguides placed in a metal sheath. As regards these waveguides, particular attention was paid by the investigators to the analysis of the dependence of the attenuation of H_{01} waves upon the parameters of the helix. Great possibilities seem to be offered by the helix waveguides with a dialectric and a metal envelope. Several waveguide

Waveguide lines with small losses

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characteristics are reproduced in the article. The main conclusion of the author is that, at the present state of research work, the most promising waveguide-types seem to be the all-metal waveguide with a dielectric film, and the helix waveguide with a metal sheath. There are 6 figures, 1 table and 15 references: 10 Soviet-bloc and 5 non-Soviet-bloc. The four most recent references to English language publications are: Miller, Waveguide as a Communication Medium, BSTJ, vol. XXXIII, No. 6, 1954; Karbowiak, Performance of Waveguides as Long-Distance Transmission Medium, Proc. IEE, 106, part B, No. 13,1959; Convention on Long-Distance Transmission by Waveguide (London, 29-31 Jan. 1959), Proc. IEE., 106, part B, suppl. No. 13, 1959; Morgan, Effect of Surface Roughness on Eddy Current Losses at Microwave Frequnecies. Journal Appl. Physics, 20 april 1948,

SUBMITTED: May 20, 1960

X

Card 3/3

9,1300
9,3275

89830

S/106/60/000/011/006/010
A055/A033

AUTHOR: Kaznacheyev, Yu.I.

TITLE: Component Elements and Equipment of Waveguide Lines

PERIODICAL: Elektrosvyaz', 1960, No. 11, pp. 48-53

TEXT: This article is a general survey of the recent developments and researches regarding waveguides and waveguide lines, and, in particular, their component elements. The following component elements are examined separately: Exciters: A theoretical investigation of the exciters, now widely used in laboratories, was carried out, in which H_{10} waves (in a rectangular waveguide) are converted into H_{01} waves (in a circular cross-section waveguide). The amplitudes of the generated parasitic waves were determined, as well as ohmic losses of the H_{01} waves. Practical measurements proved that losses considerably exceed the theoretically calculated values. Several other results of the investigation are mentioned. Matching Symmetrical Transitions: One of the main investigation results mentioned in this paragraph of the article shows that it is necessary here to minimize the losses

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at the conversion into H_{02} waves. Bends: Corrugated-waveguide bends are particularly mentioned in this paragraph. The author of the article speaks namely of the bend described by Unger in the BSTJ (Sept.1957). He also supplies some data on another periodic waveguide, which is a helix of enamelled copper wire placed into a metallic screen. Filters: Some curves are given, showing the measured attenuation of H_{11} and E_{11} waves in spiral filters. This brief survey of the principal waveguide components is followed by the description of the methods and devices used in measurements. These measurements can be divided into four groups: 1) measurement of attenuation in waveguide lines; 2) measurement of attenuation and losses in short portions or lengths of a waveguide and in waveguide components; 3) investigation of non-homogeneities in waveguide lines; 4) analysis of the structure of the electro-magnetic field in the waveguide. A theoretical comparison proved that, from the view point of the noise-proof feature, pulse-code modulation is to be preferred to amplitude or frequency modulation for communications using waveguide lines. The accumulation of distortions of

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signals along coaxial and radio relay lines becomes indeed quite substantial at distances of the order of 2,000 km, while an almost undistorted transmission of signals over practically any distance is ensured by the use of waveguides with pulse-code modulation. In the apparatus or structure terminating a waveguide line and preceding the quantizer, the same equipment will be used as with coaxial and radio relay lines. In the quantizer, the video-signal will be fractionized into a series of discrete levels transmitted one after the other at a great speed. A 7- or 8-unit binary code will be used for transmission, ensuring the division of the signal into 2^7 or 2^8 levels. Investigations concerning the design of the system terminating a waveguide line are, of course, at their initial stage. In conclusion, the author anticipates the results that will be achieved thanks to the quasi-optical transmission of signals propagating, along waveguides, under conditions approximating those of the propagation of light waves. There are 6 figures and 12 references: 10 Soviet and 2 non-Soviet.

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AUTHORS: Kaznacheyev, Yu.I., Kolesnikova, N.A. and Prozorovskiy, Yu.N.

TITLE: Fast-acting electronic instruments transforming continuous into sampled data and vice versa, for wide band communication transmitting systems with pulse code modulation

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 31, abstract 3 G212 (V sb. Teoriya i primeneniye diskretn. avtomat. sistem, M., AN SSSR, 1960, 329-338)

TEXT: The pulse systems for transmitting information which possess better interference killing features are now beginning to be used increasingly. The signals transmitted by such a system are undergoing double transformation: they are coded into a sequence of pulses before being applied to the line and at the other end of it

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are decoded and their original shape reinstated. Considerable advantages are shown by transmitting systems using pulse code modulation (ИКМ (IKM)) which hardly increase the noise during retranslation. The principle of pulse code modulation is that the "quantisized" discrete values of the continuous signal are transmitted by means of a binary pulse code which reproduces different combinations of the same pulses and intervals. The number of signals sent during every code group remains constant and their combination depends on the adopted law of coding. Usually the Sears CRT is used in pulse code modulation (Sears, R.W., Bell system Techn. J. 1948, 27, No. 1, 44-47). This tube has certain disadvantages which limit the range of its application to low frequencies only. A fast acting coding CRT with internal delay is described. The tube may be used in systems with pulse duration <10-$20\mu\mu$sec. A decoder is described which may be used in wide band systems. Certain electronic instruments are also described used for restoring the shape, amplitude and time dependence of pulses forming the code groups. Coding, decoding and restoring electron beam instruments are described for use in wide

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KAZNACHEYEV, Yu.I.; KROTOV, I.V.; GRININA, V.V.; KOLESNIKOVA, N.A.

Producing a film on a wave-guide in order to protect it from corrosion and ensure small losses on centimeter and millimeter radio waves. Zhur.prikl.khim. 35 no.12:2684-2687 D '62. (MIRA 16:5)

1. Institut fizicheskoy khimii AN SSSR i Institut radiotekhniki i elektroniki AN SSSR.

(Protective coatings) (Radio waves)
(Electronic apparatus and appliances--Corrosion)

ABASHKINA, A.F.; KAZNACHEYEV, Yu.I.

Use of epoxy resins for fastening flanges of wave guide pipes. Zhur. prikl. khim. 36 no.12:2783-2784 D'63. (MIRA 17:2)

1. Institut radiotekhniki i elektroniki AN SSSR.

ACCESSION NR: AP4040917 S/0109/64/009/006/1076/1079

AUTHOR: Kaznacheyev, Yu. I.; Gorshkova, N. K.; Kolesnikova, N. A.

TITLE: Energy losses in a flat bend of an optical waveguide

SOURCE: Radiotekhnika i elektronika, v. 9, no. 6, 1964, 1076-1079

TOPIC TAGS: waveguide, optical waveguide, flat waveguide, flat optical waveguide

ABSTRACT: The magnitude of the energy losses in a flat bend of an optical waveguide is determined in the first approximation as a function of the curvature of the bend. The problem is treated in two stages, the first dealing with losses in the bend, the second with losses in the straight section of the waveguide following the bend. The losses in the first stage are considered as due to multiple reflections from the outer wall of the waveguide, the summary result of which is a diverging beam leaving the bend. The second stage involves losses due to that divergence of the beam in a straight waveguide. Formulas are deduced for determination of

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TITLE: Possibility of using main gas pipelines for transmission of [illegible]

[illegible] ation and remote-control signals [Report at the Institute of Radio

[illegible] AN SSSR [illegible] NTO

[illegible] no. 1, 1965, 46-55